

Amendments to the specification, with markings to show changes made:

Please replace the paragraphs at page 16, lines 13-27 and page 17, lines 1-9 with the following amended paragraphs, marked to show the changes made:

FIG. 3A illustrates a more detailed drawing of the embodiment comprising a composite fluid cooled micro-scaled heat exchange device with interwoven manifolds on the top layer, in a geometry similar to FIG.2. Specifically, FIG.3A shows a device 300. The device 300 comprises a spreader region ~~[[301]]~~302, and first manifolding layer ~~[[302]]~~304, a plurality of first manifolding layer fluid paths ~~[[302']]]~~304, and second manifolding layer ~~[[303]]~~305, and plurality of second manifolding layer fluid paths ~~[[303']]]~~305, and a micro-scaled region ~~[[304]]~~303. In one embodiment, the device 300 size is approximately 18 mm x 12 mm x 3 mm. The microchannel region ~~[[304]]~~303 height is 300 micron, the width is 50 micron, and the base is 200 micron. The spreader region ~~[[301]]~~302 is 300 micron thick and preferably copper. The heat source (not shown) is approximately 0.725 millimeter wide. The first and second manifolds are approximately 2 millimeter wide and 10 millimeter long, with fluid paths ~~[[302']]]~~304 and ~~[[303']]]~~305 comprise inlets and outlets configured to receive fluid, at a minimum, from the first and second manifolding layers. It will be appreciated that the dimensions recited are exemplary and other dimensions can be used for heat sources with other sizes.

FIG. 3B shows a monolithic heat exchange device ~~[[310]]~~300. The device ~~[[310]]~~300 comprises a heat source 301, a spreader region 302, a micro-scaled region 303, a first manifolding layer 304, a second manifolding layer 305, and a top manifold 306. In one embodiment, the height from the micro-scaled region 303 to the top of the top manifold 306 is approximately 3 millimeters while the height from the micro-scaled region 303 to the tip of the first and second manifold layers 304 and 305 is approximately 2 millimeters. It will be appreciated that the dimensions recited are exemplary and other dimensions can be used for heat sources with other sizes.

Please replace the abstract paragraph at page 32, lines 3-9 with the following amended paragraphs, marked to show the changes made:

A device, method, and system for a fluid cooled micro-scaled heat exchanger is disclosed. The fluid cooled micro-scaled heat exchanger utilizes a micro-scaled region and a spreader region with a highly thermally conductive material and sized ~~specific materials and ranges of~~

~~dimensions,~~ to yield high heat dissipation and transfer area per unit volume from a heat source. The micro-scaled region preferably comprises microchannels, ~~but in alternative embodiments,~~ ~~comprises a micro-porous structure, or micro-pillars, or is comprised from the group of~~ ~~microchannels, a micro-porous structure and micro-pillars.~~